

REMARKS / ARGUMENTS

Claims 13, 17-18 and 21-24 remain pending in this application. Claims 1-12 and 25-35 have been canceled without prejudice or disclaimer. No new claims have been added.

Claim Objections

The claims have been amended to overcome the Examiner's objection.

35 U.S.C. § 103

Claims 1, 25 and 33-35 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto (U.S. Pub. No. 2002/0152339) in view of Leuth, "WORM Storage on Magnetic Disks Using SnapLock Compliance and SnapLock Enterprise". Claims 6 and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Leuth, as applied to claims 1, 25 and 33-35, and further in view of Brewer et al (U.S. Patent No. 6,336,163). Claims 9-12 and 29 and 31-32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Leuth, as applied to claims 1, 25 and 33-35, and further in view of Achiwa et al (U.S. Pub. No. 2003/0009438). Claims 13, 17 and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hoogterp (U.S. Pub. No. 2005/0210218) in view of Yamamoto and further in view of Leuth. Claim 18 stands

rejected under 35 U.S.C. §103(a) as being unpatentable over Hoogterp in view of Yamamoto and Leuth, as applied to claims 13, 17 and 24, and further in view of Brewer et al. Claims 21-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hoogterp in view of Yamamoto and Leuth, as applied to claims 13, 17 and 24, and further in view of Achiwa et al (U.S. Pub. No. 2003/0009438). Claim 22 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Hoogterp in view of Yamamoto, Leuth and Achiwa et al, as applied to claims 21 and 23, and further in view of Reynolds (U.S. Pub. No. 2002/0055942). Claim 30 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Leuth and Achiwa et al, as applied to claims 9-12, 29 and 31-32, and further in view of Reynolds. Claims 1, 11, 25 and 33-35 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Stakutis et al (U.S. Pub. No. 2006/0282484). Claim 13 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Hoogterp in view of Yamamoto and further in view of Stakutis et al. Claim 22 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Hoogterp in view of Yamamoto, Stakutis et al and Achiwa et al and further in view of Reynolds. Claim 30 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Stakutis et al and Achiwa et al and further in view of Reynolds. These rejections are traversed as follows.

Claim 13 is directed to a storage system that is coupled to a plurality of servers both through a NAS gateway and also not through the NAS gateway. A

volume status table is stored in both the NAS gateway and the storage system. The NAS gateway includes a first interface for file level I/O, a third interface for block level I/O, and a first controller which processes file level I/O requests. The storage system includes a second interface for block level I/O, the second interface being connected to the third interface, a plurality of physical volumes upon which file systems are represented, and a second controller which processes block level I/O requests. In response to a file system protect request directed to a particular file system with a specified period of time, the particular file system is protected for the specified period of time and a physical volume of the particular file system is also protected for the specified period of time. Once the particular file system is protected, write requests to the particular file system or physical volume of the particular file system via either the first or second controller are not permitted until expiration of the specified period of time. Information regarding whether or not the particular file system is protected is stored in a volume status table having a plurality of entries which indicate statuses of the particular file system. The entries include a first status indicating a retention period for the particular file system, the retention period indicating how long data in the particular file system should remain unchanged and thereby determining when data can next be written to the particular file system. The volume status table is stored in both the NAS gateway and the storage system. If the NAS gateway receives a file system protect request against the particular file system, via the third interface, the first controller changes a volume status among the plurality of entries

indicating statuses of the particular file system to restrict access. If the NAS gateway receives a file system permit request against the particular file system, via the third interface, the first controller changes a volume status among the plurality of entries indicating statuses of the particular file system to permit access if the specified period of time has expired for the volume. When the storage system receives an access from a server other than through the NAS gateway, the storage system processes the access if the status of the corresponding volume is not protected.

None of the cited references disclose or suggest the above-mentioned features of the presently claimed invention. Previously pending claim 13 was rejected as being unpatentable over Hoogterp in view of Yamamoto and further in view of Leuth. However, Hoogterp does not disclose or suggest a storage system which is coupled to a plurality of servers through both a NAS gateway and also not through the NAS gateway. The deficiencies in Hoogterp are not overcome by resort to Yamamoto or Leuth.

According to the presently claimed invention, since the storage system allows access through multiple paths, the volume status table is stored in both the NAS gateway and the storage system and access restriction needs to be implemented for both types of accesses. The claims have been amended to patentably define the present invention over the cited art.

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In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

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